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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/772,752	02/05/2004	Marc O. Woontner	14460	5715

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EXAMINER

CHANG, AUDREY Y

ART UNIT	PAPER NUMBER
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2872

DATE MAILED: 07/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 10/772,752	Applicant(s) WOONTNER, MARC O.	
	Examiner Audrey Y. Chang	Art Unit 2872	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on ____.

2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) 7-10, 12-24 is/are withdrawn from consideration.

5) ☐ Claim(s) ____ is/are allowed.

6) ☒ Claim(s) 1-6, 11 and 15 is/are rejected.

7) ☐ Claim(s) ____ is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. ____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>2/5/2004</u> .	6) <input type="checkbox"/> Other: ____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of invention group I (claims 1-6, 11 and 15) in the reply filed on May 9, 2005 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election **without traverse** (MPEP § 818.03(a)).
2. Claims 7-10 and 12-14 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention group, there being no allowable generic or linking claim. Election was made **without traverse** in the reply filed on May 9, 2005.
3. Claims 1-6, 11 and 15 remain pending in this application.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-6 and 11 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The specification and the claims **fail** to teach how could the *multi-layer structure* which only includes an “**embossable layer**” is capable of “diffracting incoming light at a predetermined reflection angle”. “An **embossable layer**” only suggests that the layer is *capable* of being “embossed” with some structure but it *does not means* it has or provides certain *essential and actual structure* such as relief

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diffraction grating or hologram that is **required and essential** to diffract the incoming light. A layer is capable of being embossed **cannot** diffract incoming light.

Claim Objections

6. **Claims 1-6 and 11 are objected to because of the following informalities:**

(1). The phrase “is *processed* to diffract incoming light” recited in claims 1 and 11 is confusing and indefinite since it is not clear what is this “process” or “being processed” referred to. What is the process involved for making the panel to be able to diffract light? Please specify. The applicant is respectfully reminded that for an article claim the “*structure*” is needed for performing the claimed function. A method step in an article claim does not give palatable weight and does not remedy the claim from *lacking the essential structure recitation*.

(2). The phrase “each individual panel is *processed* to comprise a plurality of pixels” recited in claim 3 is confusing and indefinite since it is not clear what is this *process* involved to make the panel comprises a plurality of pixels. The phrase seems to suggests certain “process” or “method step” involved in an article claim. It is not clear what is this process, however.

(3). The phrase “a plurality of angles ... corresponding to a plurality of predetermined numbers forming a sequence of numbers” recited in claim 5 is completely vague and indefinite. It is not clear what is this “predetermined numbers” and what is the “a sequence of numbers”? How does this a plurality of numbers relate to the **actual** angles? This phrase at this juncture really means *an arbitrary selection* of a set of *numbers* of the angles. Please specify what is the definite limitations being sought for patent here.

(4). The phrase “the primary colors comprise yellow-magenta-cyan-black” recited in claim 6 appears to be wrong. It is questionable that black is considered to be a “primary colors”.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-3, 5-6 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Rice (PN. 5,396,839).**

Rice teaches a *multi-layer material* or *structure* for forming an *image*, (please see Figure 7, columns 8-9) that is comprised of an *embossable layer* (55, Figures 8-11) that is *tinted* with ink (54), wherein the ink may include one of primary colors (please see column 7, lines 45-50). The embossable layer comprises a *plurality of panels* that is embossed with diffraction gratings wherein the diffraction gratings are capable of diffracting and reflecting one of the primary colors respectively. As shown in Figure 7, Rice teaches that diffraction gratings embossed on the embossable layer are capable of diffracting and reflecting red, blue or green colors. By arranging the individual diffraction gratings in certain combination, Rice further teaches that additive effect can be achieved so that a plurality of panels, each having certain arrangement of pixels of the embossed diffraction grating structures, can be formed such that the plurality of panels is capable of diffracting and reflecting yellow, magenta, cyan, black or white colors *respectively*, (please see column 9, lines 19-60).

This reference has met all the limitations of the claims with the exception that it does not teach *explicitly* that the individual panel diffracts and reflects the incoming light at a different angle. However Rice does teach *explicitly* that according to diffraction theory a diffraction grating inherently diffracts and reflects incoming light into *beams* of spectra, which means different color of light will be diffracted and observed at *different angle range*. Rice further teaches that the angle of diffraction and reflection of the incoming angle for the diffraction grating is determined by the grating structures such as the pitches and

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orientations of the grating grooves, (please see column 8 line 59 to column 9, line 18). It would then having been obvious to one skilled in the art, if this is not already of the case for the multi-layer structure of Rice, to make the individual panel that is designed to diffract different color of light to have the diffraction angle and therefore the reflection angle *different* from other panels for the benefit of allowing different color effect and decorative appearance being observed at different viewing angle. With regard to claim 5, it is implicitly true that the numbers of different angles of diffraction for the panels form a sequence of numbers.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over the patent issued to Rice as applied to claim 1 above, and further in view of patent issued to Mallik et al (PN. 5,085,514).

The multi-layer structure for forming an image taught by Rice as described for claim 1 above has met all the limitations of the claim. This reference however does not teach explicitly to include the claimed layers. Mallik et al in the same field of endeavor teaches a layer structure for making replication of embossed microstructure wherein the layer structure include a web (111, Figure 11) serves as the thermal stable layer, a strip coating (197) serves as the wear resistant layer, an embossable layer (199) with embossed microstructure, a reflective layer (201) for overlaying the embossable layer and an adhesive layer (203) which is heat activated to adhere the multi-layer structure to a substrate (205, Figure 12, please see column lines 23-40). It would then have been obvious to one skilled in the art to apply the teachings of the layer structure of Mallik et al to modify the multi-layer structure of Rice to provide wear-resistant protection as well as adhesive means to make the multi-layer structure with image formed easily attached to desired substrate agent.

10. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rice (PN. 5,396,839).

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Rice teaches a *multi-layer material* or *structure* for forming an *image*, (please see Figure 7, columns 8-9) that is comprised of a plurality of *ink dots* (55, Figure 7) each dot is being embossed with a *diffraction grating* (56) that is capable of diffracting and reflecting incoming light in a *predetermined* diffraction angle, (please see Figure 7, columns 8-9). Rice teaches that the ink dots comprises ink (54) that includes one of the primary colors, (please see column 7, lines 45-50).

This reference has met all the limitations of the claim with the exception that it does not teach explicitly that the embossed diffraction grating is a hologram. However an embossed hologram is just *one type* of embossed diffraction grating, which in this application it is really included in the broader term of “embossed diffraction grating”, explicitly taught in this reference. The only difference may just lie in whether to make the grating structure on the embossing *mold* by holographic manner or not, (i.e. how to make the mold), which really does not effect the forming the embossed diffraction gratings and therefore of the image.

Conclusion

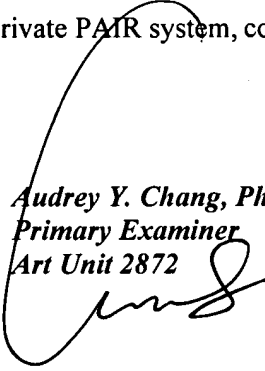
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Audrey Y. Chang whose telephone number is 571-272-2309. The examiner can normally be reached on Monday-Friday (8:00-4:30), alternative Mondays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Audrey Y. Chang, Ph.D.
Primary Examiner
Art Unit 2872



A. Chang, Ph.D.